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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/775,486 | 02/10/2004 | Kireeti Kompella | Juniper-22-1 (JNP-0302) | 1048 |

26479 7590 09/13/2007

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| EXAMINER | |
|---|---|
| KRISHNAN, VIVEK V | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2109 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 09/13/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/775,486 | KOMPELLA, KIREETI | |
| | Examiner | Art Unit | |
| | Vivek Krishnan | 2109 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,18-41 and 44-47* is/are rejected.

7)☒ Claim(s) *16,17,42 and 43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/10/2004 and 07/12/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This is a Non-Final Office Action in response to U.S. Application No. 10/775486 filed on February 10, 2004 and claiming the benefit of U.S. Provisional Application No. 60/472,859 filed on May 23, 2003. Claims 1-47 are pending.

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **Figure 4 Reference 400 (APFL message).**

2. The drawings are objected to because the MATCH FOUND (324) test in Figure 3 results in different steps (326 and 328) in response to a NO answer. This is inconsistent with what is disclosed in the specification for this step.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,10, 12, 19, 27, 36, 38 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,541,927 issued on July 30, 1996 to Kristol et al. (denoted herein as "Kristol").

As for claims 1 and 27, Kristol discloses *for use with a node, a method (and elements comprising:*

*a) (means for) accepting status information from at least two protocols* (Multiple $E_{i,j}$'s, which are end-point nodes, send their status at regular intervals to the $L_i$, which is an intermediate node that accepts this status information, see column 9 lines 30-33 and 39-42 of Kristol);

*b) (means for) composing a message including the status information* ($L_i$ consolidates the status messages from the $E_{i,j}$'s, see column 9 lines 42-45 of Kristol)*; and*

*c) (means for) sending the message towards a neighbor node* ($L_i$ sends the consolidated status message to a source node, see page 12, paragraph 264 of Kristol).

6. As for claims 10 and 36, Kristol discloses *the method of claim 1 (and elements of claim 27) wherein the neighbor node has at least one protocol peering with at least one of the at least two protocols* (the nodes in the network, $L_i$'s and sources, communicate

with each other and hence inherently have at least one peering protocol, see column 9 lines 27-55 of Kristol).

7. As for claims 12 and 38, Kristol discloses *for use with a node, a method (and elements) comprising:*

*a) (an input for) receiving a message including*

*i) for a first set of at least two protocols of a neighbor node, status information for each of the protocols of the first set* (source receives consolidated status message from Li, column 9 lines 43-54 of Kristol), *and*

*ii) a time interval* (the message includes time interval k, see column 6 line 46 of Kristol)*; and*

*b) (means for) updating neighbor node protocol status information using the message* (source maintains table T and updates $E_{i,j}$ status information in the table using the message, see column 7 lines 12-16 and 27-32 of Kristol).

8. As for claims 19 and 45, Kristol discloses *a method for monitoring liveness of multiple protocols, the method (a system) comprising:*

*(a first node adapted to)*

*a) determining, at a first node, status information for at least two protocols* (Multiple $E_{i,j}$'s, which are end-point nodes, send their status at regular intervals to the $L_i$, which is an intermediate node that accepts this status information, see column 9 lines 30-33 and 39-42 of Kristol. The Li determines status information for multiple protocols from the multiple $E_{i,j}$'s.)*;*

*b) sending, from the first node, a message including the determined status information to a second node* ($L_i$ sends the consolidated status message to a source node, see page 12, paragraph 264 of Kristol);

*(the second node adapted to)*

*c) receiving, at the second node, the message* (source receives consolidated status message from Li, column 9 lines 43-54 of Kristol); *and*

*d) updating, by the second node, first node protocol status information using the message* (source maintains table T, see column 7 lines 12-16 of Kristol, and updates $L_i$ status information in the table using the message in order to determine whether or not to remulticast packets, see column 11 lines 61-67 of Kristol).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2-7, 11, 13-15, 20, 21, 28-33, 37, 39-41, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kristol and further in view of Internet-Draft Fast Liveness Protocol published on February 2000 by Sandick et al. (denoted herein as "Sandick").

As for claims 2 and 28, Kristol discloses each and every element of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses

d) *(means for) maintaining a first timer for tracking a send time interval, wherein the acts of composing a message and sending the message are performed after expiration of the first timer (*HelloInterval that indicates how often FLIP hello messages should be sent, see 4.2 Parameters section of Sandick, and HelloInterval timer, see 5.3 Finite state machine for Hello Message Exchange section of Sandick*); and*

*e) (means for) restarting the first timer after the message is sent (*HelloInterval timer, 5.3 Finite State Machine For Hello Message Exchange section of Sandick*).*

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kristol's disclosure of composing a message and sending the message to include a send time interval and associated first timer as disclosed by Sandick. It would have been beneficial to make this combination since sending the messages periodically would help facilitate neighbor or peer protocol failure detection (see 4.2 Parameters section of Sandick).

11. As for claims 3 and 29, Kristol discloses each and every element of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses *wherein the message further includes a dead time interval, and wherein the send time interval is less than the dead time interval* (PeerDeadInterval, included in the FLIP Advertisement, which indicates how long a device should wait from the last Hello before declaring a neighbor failure and which is larger than the HelloInterval, see 4.2 Parameters section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kristol's disclosure of the message to include a dead time interval which is greater than the send time interval. Including this in the message would allow the recipient device of the message to determine when it should declare a neighbor or peer protocol failure and would thereby help facilitate neighbor or peer protocol failure detection (see 4.2 Parameters section of Sandick).

12. As for claims 4 and 30, Kristol discloses each and every element of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses *wherein the message further includes a dead time interval, and wherein the send time interval is no more than one third of the dead time interval* (PeerDeadInterval, included in the FLIP Advertisement, which is at least 3 times the value of the HelloInterval, see 4.2 Parameters section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Kristol's disclosure of the message to include a dead time interval which is greater than 3 times the send time interval. Including this in the message would allow the recipient device of the message to determine when it should declare a neighbor or peer protocol failure (see 4.2 Parameters section of Sandick). In addition, the recipient device would only conclude that a neighbor or peer protocol is down after not receiving 3 consecutive messages. This would provide the benefit of preventing erroneous declaration of a neighbor failure in a situation where a message was lost in transmission.

13. As for claims 5 and 31, Kristol discloses each and every element of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses *wherein the send time*

*interval is less than one second* (HelloInterval default value is 3 ms, see 7.2 HelloInterval section of Sandick). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of composing a message and sending the message to include a send time interval that is less than one second. This would provide the benefit of expediting the detection and thereby the correction of a failure (see Abstract section of Sandick).

14. As for claims 6 and 32, Kristol discloses each and every element of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses *wherein the send time interval is less than 100 msec* (HelloInterval default value is 3 ms, see 7.2 HelloInterval section of Sandick). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of composing a message and sending the message to include a send time interval that is less than 100 msec. This would provide the benefit of expediting the detection and thereby the correction of a failure (see Abstract section of Sandick).

15. As for claims 7 and 33, Kristol discloses each and every element of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses *wherein the message further includes a dead time interval* (PeerDeadInterval included in the FLIP Advertisement, see 4.2 Parameters section of Sandick). It would have been obvious to modify Kristol's disclosure of the message to include a dead time interval. This would allow the recipient device of the message to determine when it should declare a neighbor or peer protocol failure and would thereby help facilitate neighbor or peer protocol failure detection (see 4.2 Parameters section of Sandick).

16. As for claims 11 and 37, Kristol discloses each and every limitation of claims 1 and 27. Kristol does not explicitly disclose, but Sandick discloses *wherein the status information includes a protocol state selected from a group of protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting* (Kristol discloses that the status messages include information about the reception status of the $E_{i,j}$ nodes, see column 5 lines 20-25. Sandick discloses that the inability of a neighbor node or peer protocol to send or receive packets can be used to indicate that the neighbor node or peer protocol has failed or is down, see Parameters section and Introduction section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of the invention in further view of Sandick that the reception status of a peering node included as status information can be used to indicate that the peering protocol of the peering node is up or down.

One of ordinary skill in the art at the time of the invention would have been motivated to provide the benefit of helping to facilitate neighbor node or peering protocol failure detection (see Abstract section of Sandick).

*17.* As for claims 13 and 39, Kristol discloses each and every limitation of claims 12 and 38. In addition, Kristol and Sandick in combination disclose *the method of claim 12 (and elements of claim 38) wherein the act of updating neighbor node protocol status information includes*

*i) (means for) setting a first timer to the time interval and starting the first timer*

(PeerDeadInterval and PeerDeadInterval timer, see 5.3 Finite state machine for Hello Message Exchange section of Sandick),

*ii) if the first timer expires, (means for) setting the status of each of the protocols of the neighbor node to down*

(The source, disclosed by Kristol, sets the status of each of the neighbor nodes or peering protocols based on the consolidated message, see column 10 lines 18-30 of Kristol where the source re-multicasts blocks to each of the neighbor nodes based on the consolidated message received. In addition, Sandick discloses setting a protocol of the neighbor node to down if the first timer expires. Neighbor Adjacency fails when timer expires, see 5.3 Finite State Machine For Hello Message Exchange section of Sandick. Hence, in further view of Sandick, it would have been obvious to one of ordinary skill in the art at the time of the invention to configure the source to set each of the protocols of the neighbor node to down if the first timer expires), *and*

*iii) (means), if a further message, sourced from the neighbor node, and including*

*A) for a second set of at least two protocols, status information for each of the protocols of the second set, and*

*B) a new time interval,*

(source receives consolidated status message from $L_i$ at regular intervals, column 9 lines 43-54 of Kristol, and the message includes time interval k, see column 6 line 46 of Kristol)

*is received then, resetting the first timer to the new time interval and restarting the first timer* (reset PeerDeadInterval timer if 5.3 Finite State Machine For Hello Message Exchange section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of updating neighbor node protocol status information to include these steps in order to help facilitate neighbor node or peer protocol failure detection (see Abstract section of Sandick).

18. As for claims 14 and 40, Kristol and Sandick in combination disclose each and every limitation of claims 13 and 39. In addition, Sandick discloses *wherein each of the time interval and the new time interval is less than one second* (PeerDeadInterval default value is 12 ms, see 7.3 PeerDeadInterval section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of the invention in further view of Sandick to include a time interval in each of the sent messages that is less than one second. This would provide the benefit of expediting the detection and thereby the correction of a failure (see Abstract section of Sandick).

19. As for claims 15 and 41, Kristol discloses each and every limitation of claims 12 and 38. Kristol does not explicitly disclose, but Sandick discloses *wherein the status information includes a protocol state selected from a group of protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting* (Kristol discloses that the status messages include information about the reception status of the $E_{i,j}$ nodes, see column 5 lines 20-25. Sandick discloses that the inability of a neighbor node or peer protocol to send or receive packets can be used to

indicate that the neighbor node or peer protocol has failed or is down, see Parameters section and Introduction section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of the invention in further view of Sandick that the reception status of a peering node included as status information can be used to indicate that the peering protocol of the peering node is up or down.

One of ordinary skill in the art at the time of the invention would have been motivated to provide the benefit of helping to facilitate neighbor node or peering protocol failure detection (see Abstract section of Sandick).

*20.* As for claims 20 and 46, Kristol discloses each and every limitation of claims 19 and 45. Kristol does not disclose, but Sandick discloses *wherein the message further includes a first time interval, and wherein the act of updating neighbor node protocol status information includes*

*i) setting a timer to the first time interval* (PeerDeadInterval and PeerDeadInterval timer, see 5.3 Finite state machine for Hello Message Exchange section of Sandick);

*ii) starting the timer* (PeerDeadInterval and PeerDeadInterval timer, see 5.3 Finite state machine for Hello Message Exchange section of Sandick);

*iii) determining whether or not a further message including protocol status information is received from the first node by the second node before the expiration of the timer* (for this determination step see 5.3 Finite state machine for Hello Message Exchange section of Sandick. This step is needed in order to determine whether or not to reset the timer and whether or not to declare neighbor node or peer protocol failure. As mentioned above,

the message including the protocol status information is disclosed by Kristol); *and iv) if it is determined that a further message including protocol status information is not received from the first node by the second node before the expiration of the timer, then informing peer protocols of the second node that the at least two protocols of the first node are down.* (The source, disclosed by Kristol, sets the status of each of the neighbor nodes or peering protocols based on the consolidated message, see column 10 lines 18-30 of Kristol where the source re-multicasts blocks to each of the neighbor nodes based on the consolidated message received. In addition, Sandick discloses setting a protocol of the neighbor node to down if the first timer expires. Neighbor Adjacency fails when timer expires, see 5.3 Finite State Machine For Hello Message Exchange section of Sandick).

Hence, in further view of Sandick, it would have been obvious to one of ordinary skill in the art at the time of the invention to configure the source to set each of the protocols of the neighbor node to down if the first timer expires. This would include informing the protocols of the node that the peering protocols of its neighbor node are down.

One of ordinary skill in the art at the time of the invention would have been motivated to make this combination to provide the benefit of helping facilitate neighbor node or peering protocol failure detection (see Abstract section of Sandick).

21. As for claim 21, Kristol discloses each and every limitation of claim 19.

Kristol does not explicitly disclose, but Sandick discloses *wherein the status information includes a protocol state selected from a group of protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting*

(Kristol discloses that the status messages include information about the reception status of the $E_{i,j}$ nodes, see column 5 lines 20-25. Sandick discloses that the inability of a neighbor node or peer protocol to send or receive packets can be used to indicate that the neighbor node or peer protocol has failed or is down, see Parameters section and Introduction section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of the invention in further view of Sandick that the reception status of a peering node included as status information can be used to indicate that the peering protocol of the peering node is up or down.

One of ordinary skill in the art at the time of the invention would have been motivated to provide the benefit of helping to facilitate neighbor node or peering protocol failure detection (see Abstract section of Sandick).

22. As for claim 47, Kristol and Sandick in combination disclose each and every limitation of claim 46. In addition, Kristol and Sandick in combination disclose *the system of claim 46 wherein the status information includes a protocol state selected from a group of protocols states including at least (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting* (Kristol discloses that the status messages include information about the reception status of the $E_{i,j}$ nodes, see column 5 lines 20-25. Sandick discloses that the inability of a neighbor node or peer protocol to send or receive packets can be used to indicate that the neighbor node or peer protocol has failed or is down, see Parameters section and Introduction section of Sandick).

It would have been obvious to one of ordinary skill in the art at the time of the invention in further view of Sandick that the reception status of a peering node included as status information can be used to indicate that the peering protocol of the peering node is up or down.

One of ordinary skill in the art at the time of the invention would have been motivated to provide the benefit of helping to facilitate neighbor node or peering protocol failure detection (see Abstract section of Sandick).

23. Claims 8, 9, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kristol and further in view of Internet-Draft IPv6 Over ATM Networks published on October 17, 1998 by Armitage et al. (denoted herein as "Armitage").

As for claims 8 and 34, Kristol discloses each and every limitation of claims 1 and 27. Kristol does not explicitly disclose, but Armitage discloses *wherein the act of (means for) sending the message includes (means for) providing the message in an Internet protocol packet* (implementing internet protocol over ATM networks, see Abstract section of Armitage). Kristol discloses that the protocols used for sending the message are deployable in various networks such as ATM networks (lines 53-67 of Kristol).

Hence, it would have been obvious to one of ordinary skill in art at the time of invention in further view of Armitage to send the message in an ATM network by providing the message in an internet protocol packet. This combination would, among other advantages, provide the benefit of allowing operation of the IPv6 Neighbor Discover protocol within ATM networks (see Abstract section of Armitage).

24. As for claims 9 and 35, Kristol in combination with Armitage disclose each and every limitation of claims 8 and 34.

In addition, Kristol in combination with Armitage disclose *the method of claim 8 (and elements of claim 34) wherein the act of (means for) sending the message towards the neighbor node includes (means for) setting a destination address in the Internet protocol packet to a multicast address associated with routers that support aggregated protocol liveness* (Kristol, column 4 lines 31-50, discloses the protocols used for sending the message are implemented in multicast networks and thereby take advantage of the properties of multicast networks to send the message to nodes that can process these messages and are therefore capable of supporting these protocols).

25. Claims 18 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kristol and Sandick as applied to claims 13 and 39 above, and further in view of US Patent No. 5,349,642 issued on September 20, 1994 to Kingdon (denoted herein as "Kingdon").

Kristol and Sandick in combination disclose each and every limitation of claim 13 and 39.

Neither Kristol nor Sandick explicitly disclose, but Kingdon discloses *wherein each of the message and the further message include an indication of a relative message age, and wherein the act of (means for) updating neighbor node protocol status information includes,*

*iv) if the further message is received then, in addition to resetting the first timer to the new time interval and restarting the first timer, further (means for)*

*A) determining whether the further message is younger than the message, and*

*B) if it is determined that the further message is not younger than the message, then discarding the further message.*

(determines if the sequence number of the further received message is less than the sequence number of the previously received message and if this is the case, discards the further message, see Figure 5 of Kingdon).

Kristol discloses including a sequence number in the status message, see column 6 line 44 of Kristol. It would have been obvious to one of ordinary skill in the art at the time of the invention to use this sequence number in the manner disclosed by Kingdon in order to avoid accepting older messages that may contain information that is no longer true or valid.

26. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kristol and in further view of U.S Publication No. 2003/0061345 A1 filed on March 14, 2002 by Kawasaki et al. (denoted herein as "Kawasaki") and U.S. Publication No. 2003/0137930 A1 filed on December 21, 2001 by Futernik (denoted herein as "Futernik").

As for claim 22, Kristol, Kawasaki, and Futernik in combination disclose *a machine-readable medium having stored thereon a machine readable data structure comprising: a) an indication, for at least two protocols of a node, of a state of each of the at least two protocols* (Kawasaki discloses an OSI routing table including explicit indication of a protocol state, see Figure 4(B) of Kawasaki).

Kristol discloses a table that is updated based on a received consolidated message, see column 7 lines 12-16 of Kristol.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of the table to include explicit indication of each of the protocol states it is updating in order to facilitate access to protocol state information; *and b) a dead interval* (Futernik discloses a dead interval included in a topology prediction data structure that is used to update a routing table, see page 8 paragraphs 55-56).

Kristol discloses a table that is updated based on a received consolidated message, see column 7 lines 12-16 of Kristol.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of the table to include a dead interval in order to determine when to update information in the table.

*27.* As for claim 23, Kristol, Kawasaki, and Futernik in combination disclose each and every limitation of claim 22. In addition, Kristol, Kawasaki, and Futernik in combination disclose *the machine-readable medium of claim 22 wherein the indication indicates a protocol state selected from a group of protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting* (Kawasaki discloses an OSI routing table including explicit indication of an up protocol state, see Figure 4(B) of Kawasaki).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of the table, as described above, to include explicit

indication of each of the protocol states it is updating in order to facilitate access to protocol state information.

*28.* As for claim 24, Kristol, Kawasaki, and Futernik in combination disclose each and every limitation of claim 22. In addition, Kristol, Kawasaki, and Futernik in combination disclose *the machine-readable medium of claim 22 further comprising: c) an identifier of the node* (Kristol discloses the source node maintaining a table that indicates the reception status associated with a node, see column 7 lines 12-16. In addition, the status message disclosed by Kristol includes EPI and LEPI, which are node identifiers. Kristol does not explicitly disclose a node identifier being stored on the table, however, Kawasaki discloses an OSI routing table including a System ID which is a node identifier, see Figure 4(B) and page 5 paragraph 77 of Kawasaki).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of the table, as described above, to include a node identifier associated with a reception status in order to facilitate access to the status information.

*29.* As for claim 25, Kristol, Kawasaki, and Futernik in combination disclose each and every limitation of claim 24. In addition, Kristol, Kawasaki, and Futernik in combination disclose *the machine-readable medium of claim 24 wherein the node is a router and wherein the identifier is a router identifier* (Kawasaki discloses an OSI routing table including a System ID which is a node identifier, see Figure 4(B) and page 5 paragraph 77 of Kawasaki).

Kristol discloses that the inventive method is applicable to routers, see column 4 lines 36-38 of Kristol.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of the table, as described above, to include a node identifier associated with a reception status in order to facilitate access to the status information. In this case, if the node were a router, then the node identifier would identify the router.

*30.* As for claim 26, Kristol, Kawasaki, and Futernik in combination disclose each and every limitation of claim 22. In addition, Kristol, Kawasaki, and Futernik in combination disclose *the machine-readable medium of claim 22 further comprising: c) an interface index* (Kawasaki discloses an OSI routing table including an interface index, see Figure 4(B) and page 5 paragraph 77 of Kawasaki).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kristol's disclosure of the table, as described above, to include an interface index in order to facilitate update and access to status information associated with an interface.

***Allowable Subject Matter***

31. Claims 16, 17, 42, and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 6,611,502 B1 issued to Seaman

US Publication No. 2003/0048750 A1 filed by Kobayashi

US Patent No. 5,850,397 issued to Raab et al.

"Understanding Spanning-Tree Protocol". Copyright 1989-1997 to Cisco Systems Inc.

"Configuring IS-IS Protocol" published on March 21, 2003 by Paquet et al. Cisco Press.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivek Krishnan whose telephone number is (571) 270-5009. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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TAGHI ARANI
PRIMARY EXAMINER

9/11/07

VK